

FN2420 Compression Load Cell



- **Compression Design**
- **20 to 0-5000 kN [4 to 1000 klb]**
- **Very High Stiffness**
- **Optional Build in Amplifier**

DESCRIPTION

The FN2420 is a high accuracy compression load cell often used in applications involving calibration presses. It comes with many options, including a concave loading fixture and an integrated amplifier for high-level output. The FN2420's design and optional concave loading fixture minimize transverse effects. Constructed in stainless steel, the sensor is suitable for use in many hostile environments and can be customized for increased protection.

With many years of experience as a designer and manufacturer of sensors, Measurement-Specialties often works with customers to design or customize sensors for specific uses and testing environments.

To meet your needs we also offer complete turnkey systems. The matched components (sensor, power, amplifier and digital display) are formatted, calibrated and ready for immediate use.

FEATURES

- Full Scale Range : from 0-20 to 0-5000 kN (0-4 to 0- 1000 klb)
- Linearity : <0.1% F.S.
- For Compression Use (e.g. calibration presses)
- High Level Output Model with Integrated Amplifier
- Optional: Load Button

APPLICATIONS

- Process Control Equipment
- Weighing Calibration Tool
- Robotics and Effectors
- Laboratory and Research
- Calibration Presses

STANDARD RANGES

F.S. Ranges in N	20k	50k	100k	200k	500k	1000k	2000k	3000k	5000k
F.S. Ranges in lbf	4k	10k	20k	40k	100k	200k	400k	600k	1000k
Stiffness in N/m	3.3x10 ⁸	7.4x10 ⁸	1.2x10 ⁹	2x10 ⁹	3x10 ⁹	6x10 ⁹	9x10 ⁹	1x10 ¹⁰	1.5x10 ¹⁰
Stiffness in lbf/ft	2.2x10 ⁷	5x10 ⁷	8.2x10 ⁸	3.3x10 ⁸	1.3x10 ⁸	4x10 ⁸	6x10 ⁸	6.8x10 ⁸	1x10 ⁹

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PERFORMANCE SPECIFICATIONS

Ambient Temperature: 20±1° C (unless otherwise specified)

PARAMETERS	
Operating Temperature Range (OTR)	-20 to 80° C [-4 to 176° F]
Compensated Temperature Range (CTR)	0 to 60° C [32 to 140° F]
Zero Shift in CTR	<0.5% F.S. / 50° C [100° F]
Sensitivity Shift in CTR	<1% of reading / 50° C [100° F]
Range (F.S.)	0-20 to 0-5000 kN [0-4 to 0-1000 klbf]
Over-Range	
Without Damage	1.5 x F.S.
Without Destruction	3 x F.S.
Accuracy	
Combined Non-Linearity & Hysteresis	±0.1% F.S.

Electrical Characteristics

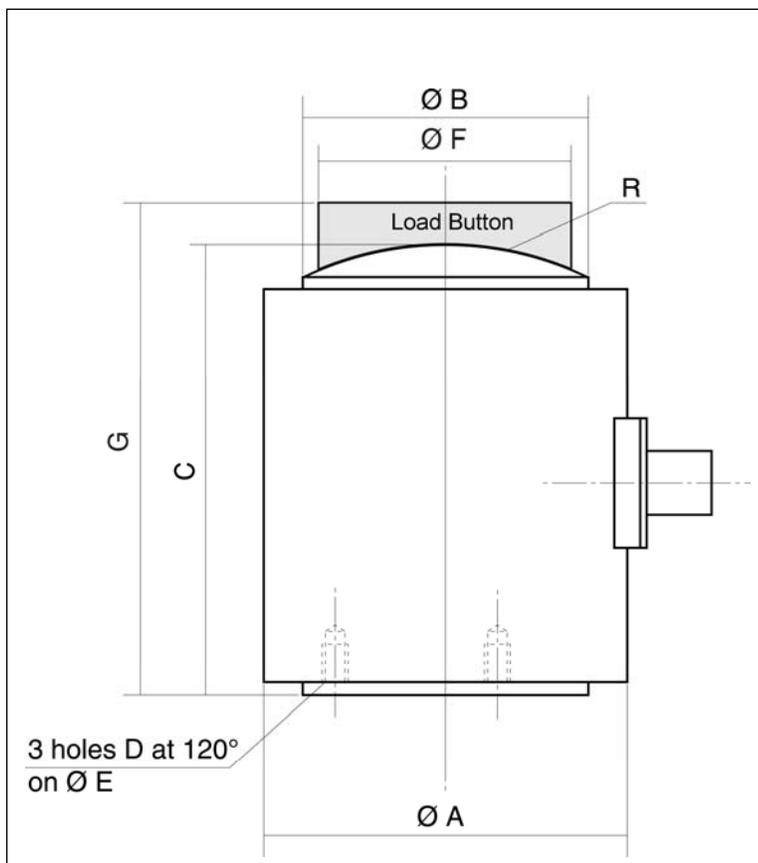
Model	FN2420	FN2420-A1	FN2420-A2
Supply Outage	10Vdc	10–30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	2mV/V	4V ±5% F.S.	5V ±5% F.S.
Zero Offset	±5% F.S.	0.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA
Output Impedance	350 to 700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes

1. Electrical Termination: Connector output including mate
2. Materials: Body in stainless steel or aluminium alloy depending on F.S.; aluminum cover
3. Protection Index: IP50 (other protection levels on request)

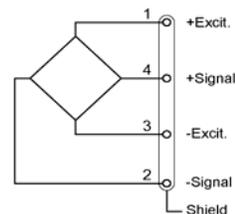
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DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)

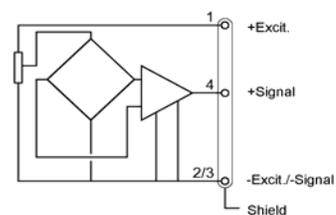


Wiring Schematic

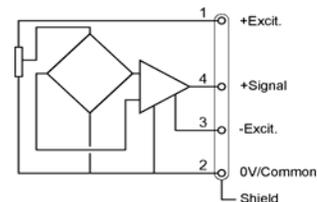
FN2420



FN2420-A1



FN2420-A2



Dimensions in mm [inch]

F.S. Ranges in N [lbf]	20k [4k]	50k [10k]	100k [20k]	200k [40k]	500k [100k]	1000k [200k]	2000k [400k]	3000k [600k]	5000k [1000k]
A	30 [1.18]	35 [1.38]	42 [1.65]	54 [2.13]	78 [3.07]	98 [3.86]	128 [5.04]	154 [6.06]	196 [7.72]
B	20 [0.79]	25 [0.98]	32 [1.26]	44 [1.73]	68 [2.68]	87 [3.43]	112 [4.41]	134 [5.28]	172 [6.77]
C	40 [1.57]	45 [1.77]	55 [2.17]	65 [2.56]	90 [3.54]	110 [4.33]	140 [5.51]	170 [6.69]	220 [8.66]
D (Thread)	M2.5	M3	M4	M4	M6	M6	M6	M8	M10
E	15 [0.59]	20 [0.79]	25 [0.98]	35 [1.38]	55 [2.17]	75 [2.95]	100 [3.94]	120 [4.72]	150 [5.91]
R	30 [1.18]	40 [1.57]	50 [1.97]	80 [3.15]	100 [3.94]	120 [4.72]	200 [7.87]	300 [11.81]	400 [15.75]
F*	15 [0.59]	19 [0.75]	26 [1.02]	35 [1.38]	54 [2.13]	69 [2.72]	98 [3.86]	118 [4.65]	129 [5.08]
G*	50 [1.97]	55 [2.17]	70 [2.76]	85 [3.35]	115 [4.53]	140 [5.51]	180 [7.09]	215 [8.46]	275 [10.83]

* Load Button

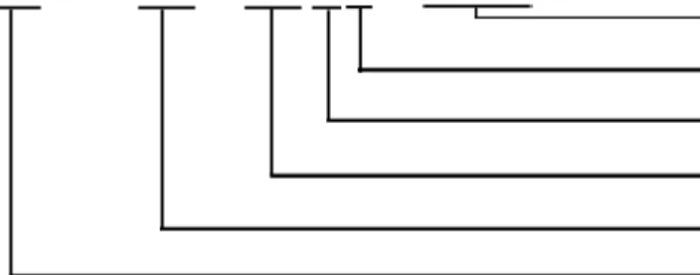
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OPTIONS

A1 : Unipolar Tension
A2 : Bipolar Tension
ET1 : CTR -20 to 100° C [-4 to 212° F] OTR = CTR
ET2 : CTR -40 to 120° C [-40 to 248° F] OTR = CTR
ET3 : CTR -40 to 150° C [-40 to 302° F] OTR = CTR (Note : ET3 not available with A1 and A2 options)
PE : Cable Gland Termination with 2 m [6.5 ft] cable

ORDERING INFO

FN2420 - A1 - 100KN -/ET1/PE



Other Options (ET1, ET3, etc.)

Unit (N=Newtons)

Multiplier (K for ranges >1000)

Range

Power Supply Reference (None, A1, or A2)

Model

RECOMMENDED ACCESSORIES

GA : Load Button

NORTH AMERICA

Measurement Specialties Inc.
1000 Lucas Way
Hampton, VA 23666
USA
Tel: 1-757-766-1500
Fax: 1-757-766-4297
Sales: pvg.cs.amer@meas-spec.com

EUROPE

Measurement Specialties
(Europe), Ltd.
26 Rue des Dames
78340 Les Clayes-Sous-Bois,
France
Tel: +33 (0) 130 79 33 00
Fax: +33 (0) 134 81 03 59
Sales: pfg.cs.emea@meas-spec.com

ASIA

北京赛斯维测控技术有限公司
北京市朝阳区望京西路48号
金隅国际C1002
电话 : + 86 010 8477 5646
传真 : + 86 010 5894 9029
邮箱 : sales@sensorway.cn
http://www.sensorway.cn

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